Volunteer Lake Assessment Program Individual Lake Reports

CHASE POND, WILMOT, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	9,002	**Max. Depth (m):**	3.4	**Flushing Rate (yr^{1})**	62.5
Surface Area (Ac.):	39	**Mean Depth (m):**	1.9	**P Retention Coef:**	0.19
Shore Length (m):	1,800	**Volume (m^3):**	296,000	**Elevation (ft):**	704

TROPHIC CLASSIFICATION

Year	Trophic class
1989	OLIGOTROPHIC
1998	OLIGOTROPHIC

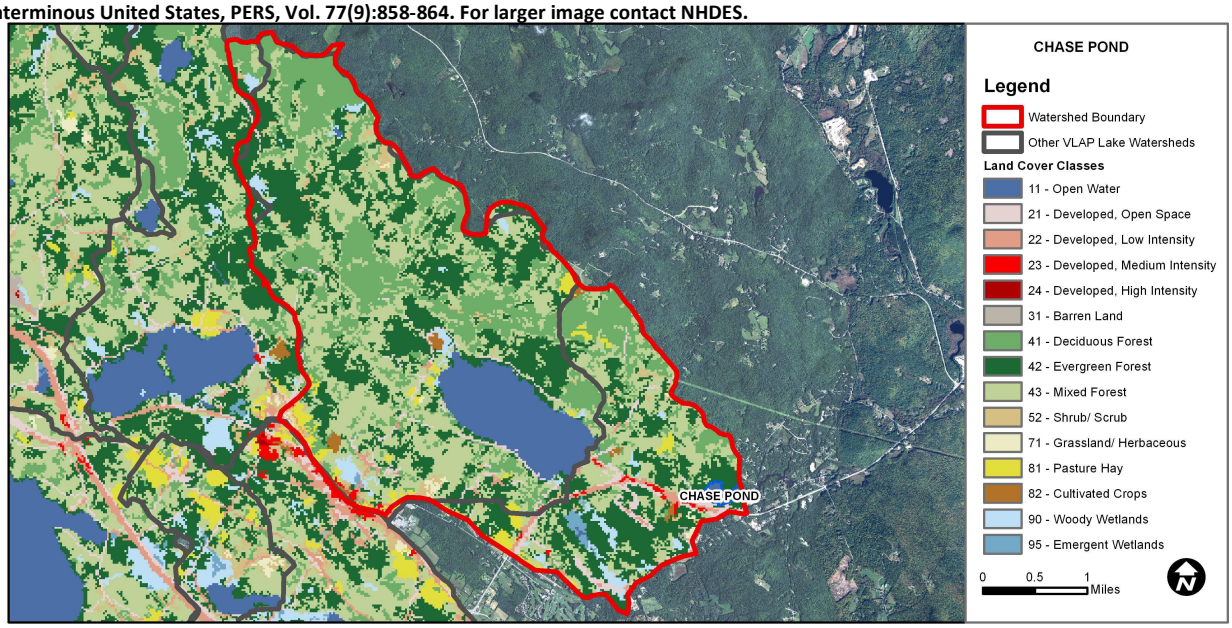
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Encouraging	>2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geomertic mean. No single sample exceedances. More data needed.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	7.21	Barren Land	0.07	Grassland/Herbaceous	0.34
Developed-Open Space	3.08	Deciduous Forest	20.58	Pasture Hay	2.17
Developed-Low Intensity	1.31	Evergreen Forest	29.32	Cultivated Crops	0
Developed-Medium Intensity	0.55	Mixed Forest	30.92	Woody Wetlands	2.12
Developed-High Intensity	0	Shrub-Scrub	1.46	Emergent Wetlands	0.38

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
CHASE POND, WILMONT, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were slightly above NH median value in 2012. Historical trend analysis indicates a significantly improving (decreasing) chlorophyll level through 2010.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels were slightly elevated in 2012 and have increased slightly since monitoring began.
- **E. COLI:** E. coli levels were well below state standards for public beaches and surface waters.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus was relatively low and historical trend analysis through 2010 indicates phosphorus levels tend to fluctuate from year to year.
- **TRANSPARENCY:** Transparency was fairly good in 2012 and historical data analysis through 2010 indicates a relatively stable pond transparency.
- **TURBIDITY:** Turbidity levels were fairly average in 2012.
- **pH:** pH levels were sufficient to support aquatic life, however have previously been at critical levels.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer; once per month in June, July and August to better determine water quality trends. Conduct chloride monitoring to assess impacts on lake and tributary conductivity levels.

Dissolved Oxygen & Temperature Profile

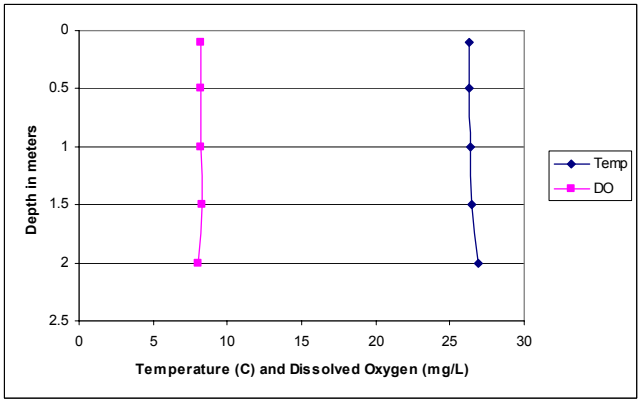


Table 1. 2012 Average Water Quality Data for CHASE POND

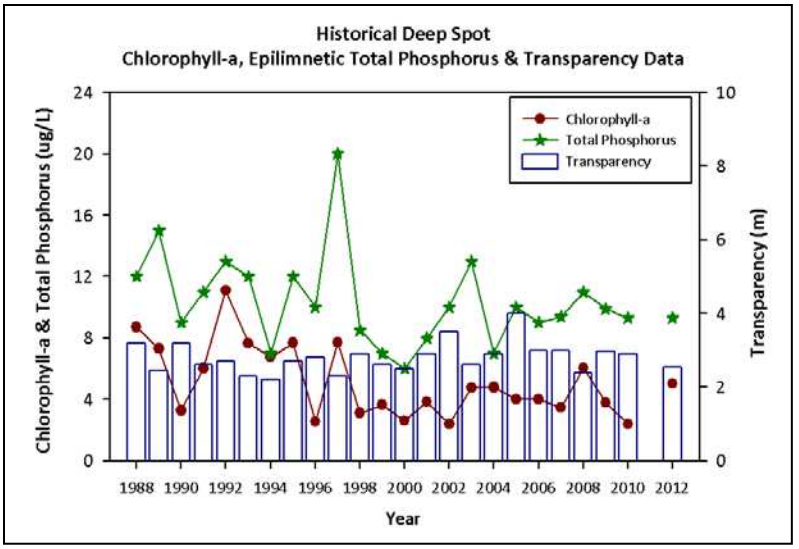
Station Name	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	m		ntu	
						NVS	VS		
Cove			80.3		8			1.12	7.31
Deep Epilimnion	7.2	5.03	78.7		9	2.55	2.90	1.1	7.14
Deep Hypolimnion			79.9		10			1.14	7.2
Inlet			80.3		12			1.37	7.1
Outlet			80.2		7			1.16	7.2
Road				10					

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Improving	Data through 2010 significantly decreasing.
Transparency	Stable	Data through 2010 not significantly increasing or decreasing.
Phosphorus (epilimnion)	Variable	Data through 2010 fluctuate annually, but are not significantly increasing or decreasing.



This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
Sara Steiner
PO Box 95
Concord, NH 03302-0095
(603) 271-2658
sara.steiner@des.nh.gov